

IN THE CLAIMS

1. (currently amended) A method of lining a plurality of two or more cylinder bores of a reciprocating piston internal combustion engine aluminum engine block comprising:

spraying said cylinder bores with a an aerodynamically focused, gas-dynamic cold spray to coat said cylinder bores with a lining material differing from a material of said engine block, said spray coming from rotatable nozzles having unified up and down relative movement with said engine block, and said nozzles being at an angle ~~at~~ of 30° plus or minus 15° with a surface of said cylinder bores, wherein said cylinder bores are coated in multiple passes.

2. (original) A method as described in claim 1, further including initially coating said cylinder bore with a first material having a first level of heat transfer resistance, and then coating said cylinder bore with a second material having a second level of heat transfer resistance greater than said first level.

3. (original) A method as described in claim 1, further including first coating said cylinder bore with a first material having a first level of adhesion with said aluminum of said engine block, and then coating said cylinder bore with a second material having a second level of adhesion lower than said first material, and said second material having a hardness greater than said first material hardness.

4. (original) A method as described in claim 2, further including first coating said cylinder bore with a first material having a first level of adhesion with said aluminum of said engine block, and then coating said cylinder bore with a second material having a hardness greater than said first material hardness.

5. (canceled)

6. (previously presented) A method as described in claim 1, wherein said nozzles are translated up and down through said cylinder bore.

7. (previously presented) A method as described in claim 1, wherein said nozzles are positioned along a longitudinal center axis of said cylinder bores.

8-19. (canceled)

20. (previously presented) A method as described in claim 1 further including initially coating said cylinder bores with a first material, and then coating said bores with a blend gradient of said first material and a second material, and then coating said bore with said second material.

21. (previously presented) A method as described in claim 20 wherein said first material has a lower thermal resistance and wear resistance than said second material.

22. (previously presented) A method as described in claim 1 wherein said first material is sized between 10-45 microns and said second material is sized less than 5 microns.

23. (previously presented) A method as described in claim 20 wherein said first material is sized between 10-45 microns and said second material is sized less than 5 microns.

24. (currently amended) A method of lining a plurality of cylinder bores of a reciprocating piston internal combustion engine aluminum engine block comprising:

spraying said cylinder bores with a an aerodynamically focused, gas-dynamic cold spray to coat said cylinder bores with materials differing from a material of said engine block, said spray coming from nozzles having unified up and down relative movement with said engine block, and said nozzles being at an angle of 30° plus or minus 15° with surfaces of said cylinder bores, said method including initially coating said cylinder bores with a copper material, and then coating said bores with a blend gradient of copper and a wear material, and then coating said bores with said wear material.